



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/537,724

06/07/2005

Patrice Bujard

SE/2/22813/A/PCT

5472

324 7590 09/12/2008

JoAnn Villamizar
Ciba Corporation/Patent Department
540 White Plains Road
P.O. Box 2005
Tarrytown, NY 10591

EXAMINER

FRAZIER, BARBARA S

ART UNIT

PAPER NUMBER

1611

MAIL DATE

DELIVERY MODE

09/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,724	Applicant(s) BUJARD, PATRICE	
	Examiner BARBARA FRAZIER	Art Unit 1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 11 and 16-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/2/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-8 and 10-21 are pending in this application. Claim 9 stands canceled.

Election/Restrictions

2. Applicant's election with traverse of the species comprising layers C1 and C2 of claims 2 and 15 in the reply filed on 6/10/08 is acknowledged. The traversal is on the ground(s) that the flake of instantly amended claim 1 is not disclosed in Coulter et al. Applicants argue that the dielectric layers of Coulter most relevant to the instant layers A1 and A2 are support layers defined in col. 7, lines 26-30 of Coulter et al, having a thickness from about 10 nm to about 200 nm, and that Coulter does not prepare or more fully define thicker layers. This is not found persuasive because the layers most functionally relevant to layers A1 and A2 are the dielectric materials that are not a part of the core as taught by Coulter et al, i.e., the layers taught in col. 9, lines 40-41 of Coulter et al, having a thickness of from about 200 nm to about 600 nm (col. 9, lines 59-60). Since the dielectric coating substantially surrounds the core (col. 9, lines 35-37), it reasonably reads on the term "on the layer (B)" in claim 1.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 6-8, 11, and 16-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/10/08.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-3, 5, 10, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al, US Patent 5,624,486.

The claimed invention is drawn to an aluminum flake comprising (A1) a layer consisting of SiO₂, (B) a layer consisting of aluminum on the layer (A1) and (A2) a layer consisting of SiO₂ on the layer (B), according to the limitations of claim 1 (see claim 1).

Schmid et al teaches multiply coated plateletlike metallic substrates comprising a first coating layer consisting essentially of silicon oxide (abstract). Suitable substrates are in particular aluminum (col. 3, lines 33-36). The coated layer is preferably silicon oxide (col. 4, lines 6-8); SiO₂ is exemplified (see Examples). The thickness of the coated layer is preferably from 50 to 600 nm (col. 4, lines 9-10). Schmid et al further

Art Unit: 1611

teach that the coated layer determines the hue and color play of the pigments according to its thickness (see col. 4, lines 10-15).

Schmid et al do not specifically teach the SiO₂-coated aluminum substrate having the layer thickness from 250 to 350 nm.

However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to form SiO₂-coated aluminum substrates having the layer thickness from 250 to 350 nm; thus arriving at the claimed invention. However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to select SiO₂-coated aluminum substrates, having a SiO₂ layer thickness from 250 to 350 nm, from the pigments having a layer thickness of 50 to 600 nm taught by Schmid et al; thus arriving at the claimed invention. One skilled in the art would have been motivated to do so because Schmid et al fairly teach and suggest a range of layer thickness encompassing that of the claimed invention, and one skilled in art would be motivated to select a layer thickness from within said ranges by routine experimentation, in order to optimize the hue and color play of the resulting pigment.

Regarding claim 2, Schmid et al teach that the coating step of the substrate can be repeated one or more times (col. 7, lines 1-2); substrates having two coats of SiO₂ are exemplified (see Examples 2 and 8). Alternatively, Schmid et al teach that the pigments may additionally have a layer (C) composed of a metal oxide such as silicon oxide (col. 4, lines 51-62). Since the layer (C) is outward from the layer (A), it reasonably reads on the term "on" in claim 2.

Art Unit: 1611

Regarding claim 3, Schmid et al exemplify SiO₂ as the coating layer (see Examples).

Regarding the layer thickness of the coating on the aluminum substrate (claims 5, 12, and 15), Schmid et al teach that the layer thickness of the SiO₂ coating is preferably from 50 to 600 nm (col. 4, lines 9-10). This range encompasses that of the claimed invention, and one skilled in art would be motivated to select a layer thickness from within said ranges by routine experimentation, in order to optimize the hue and color play of the resulting pigment.

Regarding claim 10, Schmid et al teach that the pigments are advantageously useful for many purposes, such as the coloring of plastics, glasses, ceramic products, decorative cosmetic preparations and coatings and inks (col. 8, lines 42-49).

Regarding the layer thickness of the outer SiO₂ layer (claim 15), Schmid et al teach that the coating step of the substrate can be repeated one or more times (col. 7, lines 1-2); substrates having two coats of SiO₂ are exemplified (see Examples 2 and 8), and therefore one skilled in the art would reasonably expect each layer to have the same or similar thickness. Alternatively, Schmid et al teach that the pigments may additionally have a layer (C) composed of a metal oxide such as silicon oxide (col. 4, lines 51-62) having a thickness from about 1 to 400 nm (col. 4, lines 60-62). This thickness range encompasses that of the claimed invention, and one skilled in art would be motivated to select a layer thickness from within said ranges by routine experimentation, in order to optimize the hue and color play of the resulting pigment.

Art Unit: 1611

7. Claims 4, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al (US Patent 5,624,486) as applied to claims 1-3, 5, 10, 12, and 15 above, and further in view of Coulter et al (US Patent 6,150,022).

Claims 4, 13, and 14 of the claimed invention are drawn to the aluminum flake according to claim 1 or 3, wherein the layer thickness of the layer (B) consisting of aluminum is from 10 to 100 nm (claims 4 and 14) or from 30 to 50 nm (claim 13).

The invention of Schmid et al is delineated above (see paragraph 6).

Schmid et al is silent with respect to the thickness of the aluminum substrate.

Coulter et al teach metal flake based pigments having aluminum as the core reflector material (col. 6, lines 34-37) useful in inks, paints, glass, ceramics, and cosmetics (col. 5, lines 58-61) with silicon oxide coatings (for example, see col. 9, lines 30-41 and col. 10, lines 40-52). Coulter et al further teach that the thickness of the aluminum reflector material can be in a range from about 40 nm to about 150 nm, although this range should not be taken as restrictive and can be adjusted according to the desired reflectance, e.g., opaque vs. transparent (see col. 6, lines 50-66).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to select aluminum reflector material having the thickness taught by Coulter et al for the pigment taught by Schmid et al; thus arriving at the claimed invention. One skilled in the art would have been motivated to do so because silicon oxide-coated aluminum flakes having an aluminum layer thickness of 40 to 150 nm are known to have improved specular reflectance characteristics, as taught by Coulter et al (see col. 5, lines 44-46). Additionally, the aluminum layer thickness taught

Art Unit: 1611

by Coulter et al overlaps that of the claimed invention, and one skilled in the art would be motivated to select a layer thickness of aluminum from within said ranges by routine experimentation, in order to optimize the desired reflectance of the resulting pigment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA FRAZIER whose telephone number is (571)270-3496. The examiner can normally be reached on Monday-Thursday 9am-4pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Landau can be reached on (571)272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/537,724
Art Unit: 1611

Page 8

BSF

/Sharmila Gollamudi Landau/
Supervisory Patent Examiner, Art Unit 1611